

**METHOD AND APPARATUS FOR ATTACHING CONNECTIVE
TISSUES TO BONE USING A KNOTLESS SUTURE ANCHORING
DEVICE**

Abstract of the Invention

An innovative bone anchor and methods for securing soft tissue, such as tendons, to bone, which permit a suture attachment that lies entirely beneath the cortical bone surface. Advantageously, the suturing material between the soft tissue and the bone anchor is secured without the need for tying a knot. The suture attachment to the bone anchor involves the looping of a length of suture around a pulley within the bone anchor, tightening the suture and attached soft tissue, and clamping the suture within the bone anchor. The bone anchor may be a tubular body having a lumen containing a plurality of suture-locking elements that clamp the suture therein. The locking elements may be thin and C-shaped. One or more locking plugs attached to separable actuation rods displace axially within the lumen and act on the locking elements to displace them radially. A generally uniform passage through the locking elements in their first positions converts to a smaller irregular passage after the locking plug displaces the elements to their second positions, thus effectively clamping the suture. The bone anchor further may include locking structure for securing itself within a bone cavity.